IDEM
Fall 2004
Operator Examiner
News for Wastewater Treatment Professionals

Want to Help Indiana Waters? Complete Your Clean Water Needs Survey!

Imagine… Your community needs money to extend sewer lines, your health department wants to get residents off of failing septic systems, and storm water run-off is polluting your community's waterways.

Unfortunately, for many Indiana communities, these scenarios don't require a lot of imagination—they are a reality that can cause serious environmental and health problems for ourselves, our children and our grandchildren. The State Revolving Fund Program has been able to help hundreds of Indiana communities address these problems, but unfortunately, there is only so much money to go around.

Thankfully, every four years, Indiana has an opportunity to convince Congress to give more money to our state to address our wastewater

Continued on page 10...

Who's Responsible...Satellite Collection System Owners or NPDES Permit Holders?

Throughout Indiana, a number of municipalities that hold National Pollutant Discharge Elimination System (NPDES) permits accept and treat wastewater from other entities. These other entities may include mobile home parks or other municipalities that have their own collection systems but no wastewater treatment facilities. These types of collection systems are commonly referred to as "satellite collection systems." Recently, the Indiana Department of Environmental Management has addressed a number of situations involving equipment failure in and/or unauthorized discharges from satellite collection systems. This experience has shown IDEM that there is not always a clear understanding between NPDES permit holders and satellite collection system owners regarding their responsibilities with respect to satellite collection systems. Further, there appears to be no general understanding of how

Continued on page 10...

Operator Certification Exams Set for 2005

Municipal Exams Will Include New Security Questions!

Pursuant to IC 13-18-11 and 327 IAC 5-22, notice is hereby given that the Wastewater Treatment Plant Operator Certification Examinations of all industrial and municipal classes are scheduled as follows:

Exam Date	Postmark Deadline
April 21, 2005	March 7, 2005
October 13, 2005	August 29, 2005

IDEM will notify eligible applicants of their particular testing location—Indianapolis, Elkhart, Gary or Sellersburg. Municipal exams (Classes I-SP, I, II, III and IV) will begin at 9 a.m. EST. Industrial exams (Classes A-SO, A, B, C and D) will begin at 1:30 p.m. EST. To be considered eligible, your completed application and a $30 check made payable to "IDEM" must be postmarked by the above deadline and mailed to: Cashier, IDEM, P.O. Box 7060, Indianapolis, IN 46207-7060. Applications postmarked after the deadline will NOT be considered for this examination, but will be evaluated for the next regularly scheduled exam.

Important! Municipal exams will include questions on wastewater treatment plant security issues based on the U.S. Environmental Protection Agency publication, "Protecting Your Community's Assets: A Guide for Small Wastewater Systems." A PDF version of this guide can be downloaded from the Web at **www.nesc.wvu.edu/netcsc/netcsc_index.htm** (scroll down the page to find links to Parts 1-4 of the guide). Exam applications, study guides and the exam book list can be found on the Wastewater Operator Certification Web site at **www.IN.gov/idem/water/compbr/compeval/wwcert.html**.

Indiana Launches Search for CLEAN Communities

Program Offers Improved Quality of Life and Financial Incentives for Performance

On August 6, 2004, the Pollution Prevention Section of IDEM's Office of Pollution Prevention and Technical Assistance released a voluntary recognition program called the Indiana CLEAN (Comprehensive Local Environmental Action Network) Community Challenge.

In partnership with the Indiana Department of Commerce, Indiana Department of Natural Resources, Indiana Development Finance Authority, and Indiana Department of Transportation, IDEM challenges Hoosier cities, towns, and counties to make Indiana a cleaner, healthier place to live.

The Indiana CLEAN Community Challenge helps communities take steps to plan, develop and implement a quality of life plan in collaboration with the local community and businesses. Municipalities choose activities that fit their community goals and proceed through two levels of achievement at their own pace. The Indiana CLEAN Community Challenge includes administrative and financial support from various, established sources and programs. Participating communities will also receive public recognition as a pollution prevention steward for Indiana.

In addition, municipalities that qualify as an Indiana CLEAN Community will have implemented a less expensive, more effective and greener management system for their community's environmental issues. Indiana's air, land and water will be cleaner, and the state will be a healthier place to live.

There is no fee to participate in the Indiana CLEAN Community Challenge. The potential benefits for participating municipalities are numerous and include financial incentives from various state agencies. Along with the benefits offered by these agencies, participants will receive priority support and assistance for environmental planning and consultation from OPPTA, declaration of Indiana CLEAN Community status by the governor, a public ceremony or news release announcement, and invitations to attend annual meetings with the IDEM commissioner to discuss environmental progress and needs.

For an application packet and general program information, contact IDEM's Office of Pollution Prevention and Technical Assistance at (317) 233-5554 or toll free at (800) 988-7901, or visit the Indiana CLEAN Community Challenge Web site at **www.cleancommunities.IN.gov**.

www.cleancommunities.IN.gov

Attention NPDES Permit Holders With E.coli Reporting Requirements!

Important Clarification on the Geometric Mean

Some questions have arisen as to when to calculate the geometric mean for *E.coli* reporting. All NPDES permits with *E.coli* reporting requirements state that the average monthly discharge shall be calculated as a geometric mean. This stipulation is derived from 327 IAC 5-2-11(a)(5)(B). The average monthly discharge is the ONLY *E.coli* calculation that should be computed using a geometric mean. All other calculations (e.g., daily values calculated from multiple grab samples) should be done arithmetically.

Operator Certification Without Examination?

Did you know that 327 IAC 5-22-11(g) states:
"(2) A certified operator holding a valid nonindustrial wastewater treatment certificate for Class I, Class II, Class III, or Class IV may obtain a Class A industrial certificate without examination by submitting an application required by subsection (b) for the Class A certificate.
(3) A certified operator holding a valid industrial certificate for Class A, Class B, Class C, or Class D may obtain a Class I nonindustrial certificate without examination by submitting an application required by subsection (b) for the Class I certificate."

NOTES: IDEM may process such a request without a new application provided the agency has a recent application on file. The normal application fee of $30 is required.

2004 U.S. EPA Operations and Maintenance Excellence Award Winners

Each year, IDEM selects Indiana candidates to represent our state in the U.S. Environmental Protection Agency Region 5 Operations & Maintenance (O&M) Excellence Awards Program. The initial selection process begins early in the fall and every attempt is made to find qualified candidates in all categories. Because the U.S. EPA selection committee puts a strong emphasis on the compliance record, only facilities with excellent compliance records for the past two years are considered. This list of facilities is discussed with IDEM wastewater inspectors and narrowed down to one or two for each category. Finally, the selected facility must be willing to complete the required application and prepare a submission that is sent to Region 5 in Chicago. The program offers national (and regional) first and second place awards to small, medium and large facilities in both secondary and advanced treatment plant categories; small and large facilities in a non-discharging plant category; and facilities that process less than five million gallons per day in a most improved treatment plant category. The Indiana winners for 2004 are:

- Small/Advanced Treatment Plant Category: ***Florence Regional Sewage District***

The Florence Regional Sewage District, with its treatment facility located in Florence, Indiana, has been selected to receive a Region 5 U.S. EPA Operations and Maintenance Excellence Award for first place in the small/advanced treatment plant category. Shannon Jackson, superintendent and chief operator, manages the Florence facility.

The Florence plant is designed to treat a flow of 230,000 gallons per day (receiving an average of 150,000 gallons per day) while serving a population of nearly 240 in Florence and the surrounding area. While all of the flow is domestic or commercial in nature, the plant serves a large resort and casino complex with a population equivalent to 1,500 at full capacity, which contributes approximately 80 percent (120,000 gallons per day) of the flow received. These flow and population equivalent statistics represent averages for the past year and do not reflect the recent expansion at the Belterra Resort, which doubled the number of rooms from 308 to 616, increased the population equivalent up to almost 2,500, and increased the flow to 200,000 gallons per day. The treatment plant does an outstanding job of pollutant removal, consistently removing an average of 98 percent of the biochemical oxygen demand, suspended solids and ammonia from the incoming wastewater. Major treatment processes include preliminary treatment, biological treatment in two

Continued on page 4...

Top Scorers from April 2004 Wastewater Operator Exams

MUNICIPAL

Class I-SP..... **Donald Clouse**
Class I ..... **Brian Davison**
Class II..... **Keith Kinman**
Class III..... **Leonard Ashack**
Class IV ..... **Daniel Tomich**

INDUSTRIAL

Class A-SO.... **Elmer Pate**
Class A ..... **Gayle Pahmeier**
Class B ..... **John Dailey**
Class C ..... **Anthony Kunkler**
Class D ..... **Robert Petrella**

Overall Statistics

There were 569 possible examinees, with 35 no shows. Two hundred ninety-three passed and 241 failed. The overall passing rates were 55 percent in 2004 and 54 percent in 2003.

New Program Helps POTWs Reduce Mercury

The Indiana Department of Environmental Management received a grant from the U.S. Environmental Protection Agency to help publicly owned treatment works (POTW) work with their industries to promote pollution prevention and source reduction measures for mercury in their local communities. IDEM's Office of Pollution Prevention and Technical Assistance initiated this grant to design an educational program to help POTWs begin to address mercury releases. OPPTA is developing educational materials which should be available in early 2005. For further details, contact Bobbi Steiff at (800) 988-7901 or (317) 233-6662, or via e-mail at rsteiff@dem.state.in.us.

Continued from page 3...

2004 U.S. EPA Operations and Maintenance...

oxidation ditches, final clarification, ultraviolet disinfection and cascade aeration prior to discharge to Log Lick Creek, a tributary of the Ohio River. Sludge is aerobically digested, stored in lagoons and applied to agricultural land.

This award is based primarily on the following achievements, in addition to excellent pollutant removal:
(1) The two plant employees are trained in all phases of regional sewer district operation, thus eliminating the need for contracting out to perform various tasks;
(2) The plant has a strong public education program, with regular guided tours and training provided for local area wastewater treatment plant personnel;
(3) The Belterra Resort and Casino, nearby on the Ohio River, is considered a large industrial/commercial user and is closely monitored for grease and toxic discharges (The resort/casino has undertaken some pollution controls on their own.); and
(4) As a result of an energy audit by the local power company, the plant is saving up to $200 per month in electricity costs by installing a capacitor bank to store excess energy for use during periods of high demand.

City of Franklin Wastewater Treatment Plant

■ Medium/Advanced Treatment Plant Category: ***City of Franklin***

The City of Franklin, Indiana has been selected to receive a Region 5 U.S. EPA Operations and Maintenance Excellence Award, tying for first place in the medium/advanced treatment plant category. Rick Littleton, wastewater superintendent, manages the facility.

The Franklin plant is designed to treat a flow of 5.13 million gallons per day (receiving an average of 4.3 million gallons per day) while serving a population of nearly 20,000 in Franklin and the surrounding area, consisting of 22 square miles. Approximately 19 percent of the flow comes from industrial sources. The plant does an outstanding job of pollutant removal, consistently removing an average of nearly 99 percent of the biochemical oxygen demand, suspended solids and ammonia from the incoming wastewater. Major treatment processes include preliminary treatment, a flow equalization basin, biological treatment in oxidation ditches, final clarification, ultraviolet disinfection and post-aeration prior to discharge to Youngs Creek.

This award is based primarily on the following achievements, in addition to excellent pollutant removal:

Continued on page 9...

Did You Know...

Residual Chlorine Concentration: What is the Minimum?
327 IAC 5-10-6(c) states: "(1) For those sanitary dischargers designated as minor facilities (generally those with a population equivalent (PE) of less than ten thousand (10,000)), the residual chlorine concentration after disinfection (but prior to dechlorination) is to be maintained at a minimum of five-tenths (0.5) milligram per liter."

Dissolved Oxygen: What is the Minimum Allowed?
327 IAC 2-1-6(b)(3) states that the minimum dissolved oxygen requirement in surface waters of the State of Indiana shall be as follows: "(3) Concentrations of dissolved oxygen shall average at least five (5.0) milligrams per liter per calendar day and shall not be less than four (4.0) milligrams per liter at any time."

Sample Preservation Methods: Where Do They Originate?
Although all editions of *Standard Methods for the Examination of Water and Wastewater* will contain U.S. Environmental Protection Agency preservation methods, the origination of these preservation methods is the Federal Register, specifically 40 CFR 136.

Need Help With BOD_5 Seeding?

The biochemical oxygen demand five-day (BOD_5) test probably gives wastewater laboratory personnel more trouble than all of their other testing combined. And often, a large share of those problems is with seeding. The following instructions for seeding, taken from the "Quality Assurance Manual for Indiana Wastewater Laboratories" located at **www.IN.gov/idem/water/compbr/inspections/qaqclabs.pdf**, are step-by-step leading from the initial seed study to the daily seeding procedure.

Initial Study

Before planning to seed samples, conduct a study to determine the amount of seed to add to seed controls and samples. Instructions for the study are as follows.

- **Preparation of Seed**

1. Collect a raw influent grab sample the day before performing the test. If the influent contains significant industrial loading, settled mixed liquor may provide a better seed than raw influent. If used for seed, settled mixed liquor does not need to be incubated at 20°C overnight. Seed can also be commercially obtained. There are at least two products widely in use: BioSeed and PolySeed. **NOTE:** The raw influent grab sample should be taken at the same time of day each time seeding material is needed. This will help insure that samples are somewhat uniform.
2. Place the raw influent grab sample in an incubator (20°C) overnight.

- **Preparation of Seed Controls**

1. Take the incubated raw influent sample out of the incubator. **DO NOT MIX.**
2. Pipet 3, 6, 9, 12, 15, and 18 milliliters (mL) of the clear supernatant into six BOD bottles respectively.
3. Fill these six bottles with BOD dilution water.
4. Determine the initial dissolved oxygen ($DO_{initial}$) on each of the six bottles.

- **Calculation of Seed Correction**

1. After the five-day incubation, determine the final dissolved oxygen (DO_{final}) on each of the six seed controls set up in the section above.
2. Ideally, one of the six seed controls will have close to 50 percent dissolved oxygen depletion. If this 50 percent dissolved oxygen depletion is not obtained, repeat the initial study using larger volumes of the clear supernatant until the 50 percent dissolved oxygen is obtained. **NOTE:** Each study will require that you start with a new raw influent grab sample which has been incubated and allowed to settle overnight.

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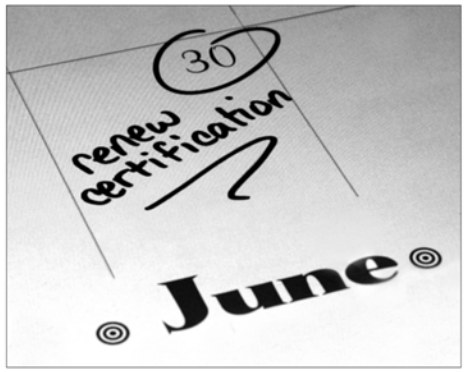
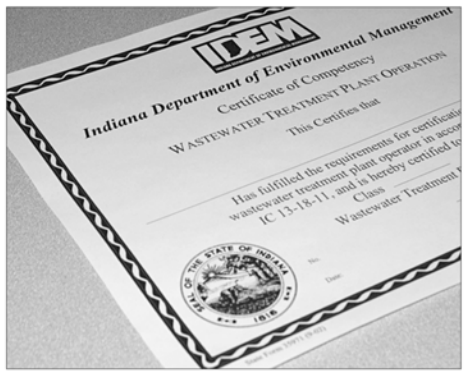


When Does Your Certification Expire?

Wastewater operator certification licenses must be renewed every two years. The expiration date always falls on June 30. For information regarding the status of your certification, contact Heather Tippey at (317) 232-8791 or via e-mail at htippey@dem.state.in.us.



Don't Forget!

A wastewater treatment plant operator must permanently and visibly display his or her certificate at the wastewater treatment plant office. If the wastewater treatment plant operator supervises more than one wastewater treatment plant, the operator must obtain a duplicate certificate to display in the office of each wastewater treatment plant supervised. For more information, contact Heather Tippey at (317) 232-8791 or via e-mail at htippey@dem.state.in.us.

Continued from page 5...

Need Help With BOD_5 Seeding?

3. For each seed control dilution analyzed, calculate the dissolved oxygen (DO) lost per mL of seed used as follows:

$$\frac{DO_{initial} - DO_{final}}{\text{mL raw influent supernatant used}}$$

Example:
9 mL of incubated raw influent supernatant was added to a 300 mL BOD bottle and the bottle was then filled with BOD dilution water. The $DO_{initial}$ = 8.8 mg/L. After the five-day incubation period, the DO_{final} = 4.3 mg/L. Using the formula above:

$$\frac{8.8 \text{ mg/L} - 4.3 \text{ mg/L}}{9 \text{ mL seed added}} = \frac{4.5 \text{ mg/L}}{9\text{mL}} = 0.5 \text{ mg/L DO lost per mL of seed added}$$

4. Use the same rule for DO depletion criteria as in all other BODs (at least 2.0 mg/L DO depletion and at least 1.0 mg/L residual DO (after five days) (*Standard Methods, 18th Edition*).

5. If more than one of the seed controls meets the DO depletion criteria referred to in #4, calculate the average DO lost per mL of seed (See Table 1).

Table 1
Initial Study to Determine How Many Milliliters of Incubated Raw Influent Supernatant (Seed) to Use in Seed Controls

Bottle #	Seed Added (mL)	DO Initial (mg/L)	DO Final (mg/L)	DO Lost (mg/L)	DO Lost per mL of Seed
A	3	8.9	7.4	1.5	***
B	6	8.8	5.9	2.9	0.48
C	9	8.8	4.2	4.6	0.51
D	12	8.7	2.8	5.9	0.49
E	15	8.8	1.4	7.4	0.49
F	18	8.8	0.2	8.6	***

*** = Did not meet the criteria of 2.0 mg/L DO loss or 1.0 mg/L DO residual

In Table 1 above, it is observed that the sample with 9 mL of seed added lost approximately 50 percent of the $DO_{initial}$. Thus, by setting up seed controls with 6, 9, and 12 mL respectively, we can be fairly confident that at least one of the seed controls will give you a DO depletion which meets the criteria referenced in #4.

Using Table 1, the average DO lost per mL of seed added =

$$\frac{0.48 + 0.51 + 0.49 + 0.49}{4 \text{ (Number of valid results)}} = \frac{1.97}{4} = 0.49 \text{ DO lost/mL of seed added} = \text{SEED CORRECTION}$$

Continued on page 7...

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Need Help With BOD_5 Seeding?

- **Calculating Amount of Seed to Add to the Effluent Sample**

1. If the seed correction falls in the range of 0.6 – 1.0 per milliliter of seed, it should be sufficient to add 1 mL of seed to each of your BOD bottles when you are conducting your usual tests. If the seed correction falls in a range below 0.6 and the seed controls met the DO depletion criteria, the amount of seed added to each of your BOD bottles will need to be such that the number of milliliters added multiplied by the seed correction falls within the range of 0.6 to 1.0.

   Examples:

   Seed correction is 0.3, if 2 mLs are added to BOD samples
   $0.3 \times 2 = 0.6$

   Seed correction is 0.4, if 2 mLs are added to BOD samples
   $0.4 \times 2 = 0.8$

   Now you should have a reasonable idea of what volumes of seed (clear supernatant) will be needed to add to your final effluent BOD samples to meet the depletion criteria.

Seeding Procedure for Daily Final Effluent BOD Testing

- **Preparation of Seed**

1. Follow steps 1 and 2 in the initial study instructions under Preparation of Seed (see page 5).

- **Preparation of Seed Controls**

2. Using calculations determined in your initial study that include the volumes that gave approximately 50 percent depletion, follow steps 1 through 4 in the initial study instructions under Preparation of Seed Controls (see page 5). **NOTE:** You will only be using three dilutions, not six as in the initial study.

- **Preparation of Seeded BOD Samples**

3. Fill the bottles approximately 1/3 to 1/2 with dilution water.
4. Pipet the amount of seed (supernatant) that you have already determined will give the needed depletion into each of your final effluent BOD sample bottles.
5. Add the appropriate amount of sample (final effluent) to each of the bottles.
6. Complete the filling of the BOD bottles with dilution water.
7. Determine the initial dissolved oxygen ($DO_{initial}$) on each of the bottles.

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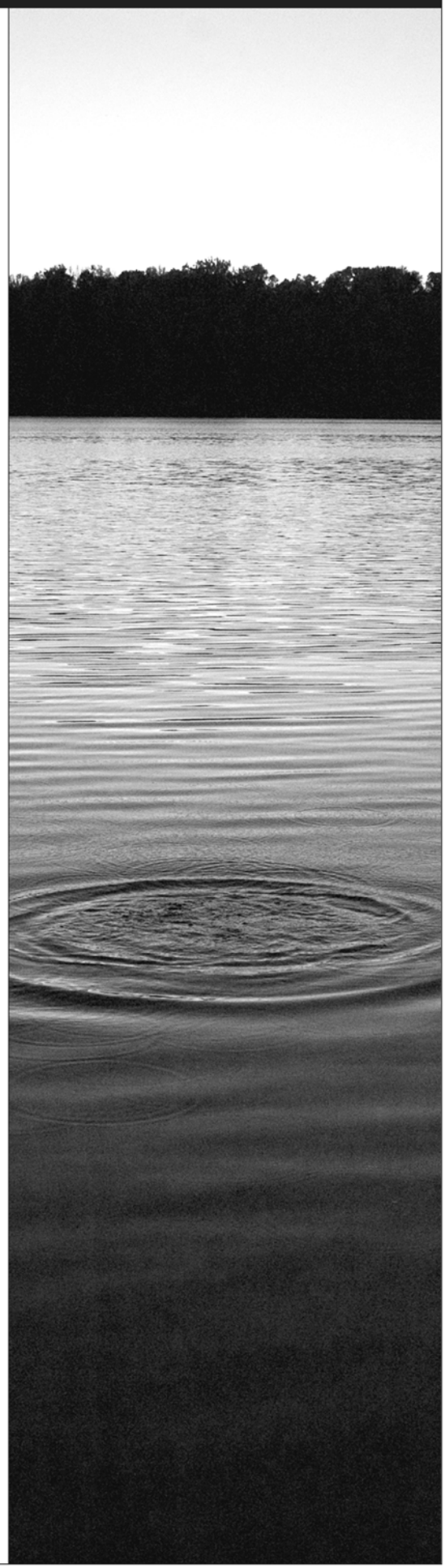

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Need Help With BOD_5 Seeding?

● Calculation of Seed Correction

8. After the five-day incubation, determine the final dissolved oxygen (DO_{final}) on each of the three seed controls set up in the section above (and the final dissolved oxygen (DO_{final}) on the rest of your BOD samples as is normal).

9. Follow steps 3, 4, and 5 in the initial study instructions under Calculation of Seed Correction (see page 6).

● Calculation of BOD_5 in Sample

10. BOD_5 = BOD mg/L = ($BOD_{initial}$ – BOD_{final}) – seed correction x dilution factor

$$\text{Dilution factor} = \frac{300}{\text{Sample size (mL)}}$$

Table 2 is a sample chart that should help you understand the calculations involved with seeded BOD samples.

Table 2

Bottle #	Sample	% Dilution	Seed Added (mL)	DO Initial	DO Final	DO Lost	DO Lost/mL of Seed	*Seed Correction	Corrected DO Lost	BOD_5 mg/L
A	Blank	--------	--------	8.8	8.6	0.2	--------	--------	--------	--------
B	Blank	--------	--------	8.8	8.7	0.1	--------	--------	--------	--------
C	Seed Control	--------	9	8.8	6.4	2.4	0.27	--------	--------	--------
D	Seed Control	--------	18	8.8	3.6	5.2	0.29	--------	--------	--------
E	Final	66	3	8.7	5.9	2.8	--------	0.8	2.0	3.0
F	Final	99	3	8.9	4.9	4.0	--------	0.8	3.2	3.2

Below is an explanation of the column headings in Table 2 and how the calculations were derived.

% Dilution = Sample Volume (mL) ÷ 300 mL total volume in BOD bottle x 100

DO Lost = DO Initial – DO Final

DO Lost/mL of Seed = DO Lost ÷ Seed Added (mL)

***Seed Correction** = (DO Lost/mL of Seed) (3) as 3 mL of seed was added to the samples

Corrected DO Lost = DO Lost – *Seed Correction

BOD_5 mg/L = Corrected DO Lost ÷ decimal equivalent of % Dilution (A 66 percent dilution would be entered as 0.66 on the calculator.)

After averaging the final BOD_5 results, you would report a final BOD_5 of 3.1 mg/L.

If you have questions about these procedures, contact Barb McDowell at (317) 233-6464 or via e-mail at bmcdowel@dem.state.in.us.

Continued from page 4...

2004 U.S. EPA Operations and Maintenance...

(1) The facility has computerized plant operations control, pumping, maintenance management and process monitoring with a SCADA system, which has resulted in substantial cost savings and increased plant efficiency;
(2) The SCADA software interfaces with state and federal permit compliance systems and won an award from the manufacturer in 1996;
(3) The city was first in Indiana to operate a Class A autothermophilic aerobic digestion process and in 1997 received an award for best biosolids management (less than five million gallons per day);
(4) All staff are cross-trained in various areas of plant operation to minimize equipment downtime; and
(5) The plant has a strong public education/outreach program, including a cooperative program with Franklin College for training chemistry students in the laboratory.

■ Small/Secondary Treatment Plant Category:
Lake Monroe Regional Sewer District - Caslon

The Lake Monroe Regional Sewer District, with its Caslon Treatment Facility located near Bloomington, Indiana, has been selected to receive a Region 5 U.S. EPA Operations and Maintenance Excellence Award for first place in the small/secondary treatment plant category. The Lake Monroe Caslon facility is contract-operated and is supervised by Jeff Farmer, plant manager. The contract operations firm is Bynum Fanyo Utilities, Bloomington.

The Lake Monroe Caslon plant is designed to treat a flow of 300,000 gallons per day (receiving an average of 122,000 gallons per day) while serving a population of nearly 3,000 in an area near Monroe Lake which includes individual homes, a golf course, the Pointe Resort and the community of Harrodsburg. All of the flow comes from domestic or commercial sources. The treatment plant does an outstanding job of pollutant removal, consistently removing an average of 91 percent of the biochemical oxygen demand and 94 percent of the suspended solids from the incoming wastewater. Major treatment processes include three package-type extended aeration activated sludge units, a one million gallon flow equalization tank, post aeration and ultraviolet disinfection prior to discharge to Clear Creek. Sludge is aerobically digested, hauled to the town of Ellettsville for further processing and landfilled.

Pictured left to right are Lake Monroe Regional Sewer District representatives Jon Cross (chief operator), Jeff Farmer (operations manager), Tom Caswell (lead operator) and U.S. EPA Awards Coordinator David Stoltenberg.

This award is based primarily on the following achievements, in addition to excellent pollutant removal:
(1) The district has an outstanding compliance record, with no effluent violations for at least two years;
(2) Rigorous monitoring and process control testing at their newly built laboratory has allowed district staff to virtually eliminate plant upsets;
(3) All staff are cross-trained in all aspects of district operation, including the treatment plant and collection system;
(4) The district has an aggressive collection system maintenance program for nine miles of sewer and 40 lift stations, which includes regular inspection and cleaning of lift stations, annual cleaning of the collection system, and TV inspection of sewers every two years; and
(5) A remote alarm-monitoring program consisting of cellular alarms that alert operators to immediate problems with lift stations was started in 2001.

IDEM congratulates all of the winners and commends them for their achievements!

Lab Corner

New Charts on the Web!

Check out IDEM's Web site at **www.IN.gov/idem/water/compbr/inspections/index.html** for new control charts for both accuracy and precision, available in Microsoft Excel. Each chart has an accompanying explanation page. The Accuracy Control Chart could be used, for example, to document the accuracy of the Glucose-Glutamic Acid Standard (GGA), which is the most widely used check standard for the $BOD_5/CBOD_5$ test. The Precision Control Chart should be used to monitor the agreement between duplicate samples.

Continued from page 1...

Who's Responsible...

IDEM views the legal responsibilities of these entities with respect to maintenance of and prevention of unauthorized discharges from satellite collection systems. Many permit holders believe they bear no responsibility for a satellite collection system they serve because they do not own it. Meanwhile, satellite collection system owners often believe they bear no responsibility for their satellite collection system because they pay the NPDES permit holder to collect and treat their wastewater.

It is IDEM's position that *both* entities bear a legal obligation when it comes to satellite collection systems. The entity that owns the satellite collection system is legally responsible precisely because it owns the satellite collection system. Additionally, in some cases, the satellite collection system owner may hold an operational permit issued by IDEM pursuant to 327 Indiana Administrative Code (IAC) 3-4. These operational permits require, among other things, that the satellite collection system be maintained in good working order. The NPDES permit holder is also legally responsible because under the NPDES Permit rules, specifically 327 IAC 5-2-8(8), the permit holder is required to "at all times maintain in good working order and efficiently operate all facilities and systems for *collection* and treatment that are: installed *or used* by the permittee; and necessary for achieving compliance with the terms and conditions of the permit." (327 IAC 5-2-8(8), Emphasis added). This provision does not limit an NPDES permit holder's obligation to facilities and systems that it owns, but rather extends to facilities and systems that are installed *or used by the NPDES permit holder.* Because the NPDES permit holder *uses* the satellite collection system to convey wastewater to its wastewater treatment plant, the NPDES permit holder bears some responsibility for its maintenance.

IDEM strongly encourages NPDES permit holders and satellite collection system owners to work cooperatively to ensure that all facilities and systems used for collection and treatment of wastewater are maintained in good working order. IDEM recognizes that, in many cases, NPDES permit holders and satellite collection system owners enter into private agreements, setting forth the roles and responsibilities of each entity, particularly with respect to maintenance of the satellite collection system. While IDEM believes that such agreements may serve as a useful tool for avoiding/resolving disputes between NPDES permit holders and satellite collection system owners, IDEM is not bound by the terms of these private agreements. Rather, IDEM evaluates situations involving equipment failure in and/or unauthorized discharges from satellite collection systems on a case-by-case basis, taking into account the particular circumstances involved. In the event that it becomes necessary to initiate an enforcement action, IDEM may proceed solely against the satellite collection system owner, solely against the NPDES permit holder, or against both entities, depending upon the particular circumstances.

For more information, contact Rick Roudebush, section chief of the Wastewater Inspection Section of IDEM's Office of Water Quality, at (317) 234-2579 or via e-mail at rroudebu@dem.state.in.us.

Did you Know...

Methane gas is a colorless, odorless, flammable hydrocarbon.

Continued from page 1...

Want to Help Indiana...

and nonpoint source needs, and now YOU can help. Indiana is currently conducting its Clean Watershed Needs Survey. By filling out a survey to demonstrate your wastewater infrastructure and nonpoint source pollution abatement needs over the next five to 20 years, you will help our state show Congress how much funding we need to address them.

The survey was mailed to 118 greater wastewater systems (serving populations more than 10,000), 286 small systems (serving populations less than 10,000), 95 local health departments, 25 resource conservation areas and soil and water conservation districts, and 50 watershed coordinators around the state.

So far, Indiana has only received responses from 22 health departments and 18 wastewater systems. State Revolving Fund Program staff members are hoping to hear back from a large percentage of entities surveyed so that communities like yours can address the many problems around the state such as run-off, polluted waterways, failing septics and aging infrastructure.

If you have questions about the survey, need assistance or want to receive a survey, contact Arthur Carter, Wastewater State Revolving Fund administrator, at (317) 233-2474 or via e-mail at acarter@dem.state.in.us. Surveys should be submitted to the state by November 19, 2004.

Is Your Facility Noncompliant? Know Your Reporting Requirements

Did you know that 327 IAC 5-2-8(10) states:

"(C) The permittee shall orally report information on any of the following types of noncompliance within twenty-four (24) hours from the time the permittee becomes aware of such noncompliance:

(i) Any unanticipated bypass that exceeds any effluent limitation in the permit.

(ii) Violation of a maximum daily discharge limitation for any of the pollutants listed by the commissioner in the permit to be reported within twenty-four (24) hours.

(iii) Any noncompliance that may pose a significant danger to human health or the environment. Reports under this item shall be made as soon as the permittee becomes aware of the noncomplying circumstances to the emergency response telephone numbers [(317) 233-7745 or (888) 233-7745 (toll-free within Indiana)].

(iv) Any upset that exceeds any effluent limitation in the permit.

A written submission shall also be provided within five (5) days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

The commissioner may waive the written report on a case-by-case basis if the oral report has been received within twenty-four (24) hours." A form for faxing in your report can be found on IDEM's Web site at **www.IN.gov/idem/water/publications/appsforms.html#bypass**.

Monitoring Records

What Should You Keep? For How Long?

Did you know that 327 IAC 5-2-14(a) states:

"Sec. 14.
(a) Any PERMITTEE required to monitor under 327 IAC 5-2-13 shall maintain records of all monitoring information and monitoring activities, including:

(1) the date, exact place and time of sampling or measurements;

(2) the person(s) who performed the sampling or measurements;

(3) the date(s) analyses were performed;

(4) the person(s) who performed the analyses;

(5) the analytical techniques or methods used; and

(6) the results of such measurements and analyses.

(b) All records of monitoring activities and results (including all original strip chart recordings for continuous monitoring instrumentation and calibration and maintenance records) shall be retained by the permittee for three (3) years. The three-year period shall be extended:

(1) automatically during the course of any unresolved litigation regarding the discharge of pollutants by the permittee or regarding promulgated effluent guidelines applicable to the permittee; or

(2) as requested by the commissioner."

Alternative Technologies Exhibited at Wastewater Conferences

Three wastewater technologies have emerged that operators should know about. This technical update is not intended to promote any vendor. IDEM encourages operators to explore all vendors and all available information before making any decision for their facilities.

- Solids handling has been a particular problem for small communities. Some towns now use "Geo-Tubes," which are large filter bags that are placed in dumpsters that swing open in the back. The sludge/polymer slurry is pumped into the bag and clear filtrate drains under the back door, usually onto a drying bed. When the bag is full after multiple fillings, the entire dumpster is hauled to a landfill and the back door is opened to drop out the bag. For more information, visit the Web at **www.geotubes.com/index1.html**.

- Mixed liquor dissolved oxygen is difficult to maintain at some plants during warm months when biological activity and influent septicity are higher and the solubility of oxygen is lower. Technology has been developed to inject pure oxygen into the raw wastewater at lift stations. Oxygen levels above 80 mg/L are achievable, eliminating septicity in the collection system and pre-aerating the influent. For more information, visit the Web at **www.eco2tech.com**.

- Air-lift pumps for return activated sludge have been a problem because they easily plug up if not operated at full force. "Geyser Pumps" are alternative air-powered pumps that provide better flow control and improved lift. Unlike air-lift pumps that raise sludge with a continuous release of fine bubbles, air accumulates in a bell-housing before being released in a single, large pulse that lifts the sludge with even greater force. Since each pulse has the same force, the flow rate is controlled by raising or lowering pulse rate without reducing the amount of lift. This enables the operator to set a return rate that increases solids return while reducing return flow, thereby effectively reducing hydraulic loading on the plant. Geyser Pumps can be retrofitted to replace pre-existing air-lift pumps. For more information, visit the Web at **www.geyserpump2.com**.

Some of these alternative technologies have been exhibited at wastewater conferences that qualify for continuing education credit and illustrate the importance of continuing education.

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